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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
RUTTEN, JAMES D

ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/758,266	LIANG ET AL.	
	Examiner	Art Unit	
	J. Derek Rutten	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 April 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 10,20 and 39-54 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 10,20 and 39-54 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 January 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/9/04</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) <input type="checkbox"/> Notice of Informal Patent Application
6) <input type="checkbox"/> Other: _____ |
|--|--|

Art Unit: 2192

DETAILED ACTION

1. This action is in response to Applicant's preliminary amendment filed 4/9/04. Claims 1-9, 11-19, and 21-38 have been canceled, and new claims 39-54 have been added. Claims 10, 20, and 39-54 remain pending in the application and have been examined.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). A copy of the International Application has been filed in parent Application No. 09/856,779, filed on 5/25/01.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10, 20, and 39-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 10 recites the limitation "the specific types...in which the profiler is interested" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim. While the claim recites a "profiler agent" that shows *interest* in events and information by respective requesting and enabling, the profiler itself is not seen to be "interested," but simply supplying the events and information to the agent. For the purpose of further examination, the claim will be interpreted as suggested above. Independent claims 20 and 49 contain similar limitations and are rejected for

Art Unit: 2192

the same reasons. Dependent claims 39-43, 44-48, and 50-54 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 20 and 44-48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

8. Claim 20 is directed to a "computer readable medium". The originally filed specification provides a discussion of a "computer readable storage medium" on page 15 lines 25-33. These descriptions of a "medium" do not appear to limit the medium to a tangible embodiment, and expressly include such non-tangible media as wireless transmission media, or an electromagnetic signal. Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101. First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine. A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter. A product is a tangible physical article or object, some form of matter, which a signal is not. In contrast, a tangibly

Art Unit: 2192

claimed computer-readable medium (e.g. magnetic or optical disk) encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Claims 44-48 are rejected as failing to correct the deficiencies of the rejected parent claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 10, 20, 39, 42-44, 47 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by prior art of record "Recent Enhancements to PVM" by Beguelin et al. (hereinafter "Beguelin").

In regard to claim 10, Beguelin discloses: *A method for interfacing a profiler to a virtual machine, the method comprising the steps of: receiving from a profiler agent of the profiler at least one of either a request for specific types of events and information or an enablement of notification of specific types of events and information; and registering the specific types of events and information in which the profiler is interested.* See page 120, section 5.1. Here, the PVM console is used as a profiler agent that sends requests

Art Unit: 2192

for event information. Registration is shown through the use of the “pvm_settmask()” routine which registers certain events.

In regard to claim 20, Beguelin discloses: *A computer-readable medium carrying one or more sequences of one or more instructions for interfacing a profiler to a virtual machine, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps...* See page 108, e.g. “network of heterogeneous computers...” A computer-readable medium is inherently provided through the use of Beguelin’s computers, otherwise, the computer processor would be unable to load executable instructions. All further limitations have been addressed in the above rejection of claim 1.

In regard to claim 39, the above rejection of claim 10 is incorporated. Beguelin further discloses: *sending events and information of the specific types to the profiler agent.* See page 120, left column, e.g. “events are sent to the PVM console.”

In regard to claim 42, the above rejection of claim 10 is incorporated. Beguelin further discloses: *receiving from the profiling agent of the profiler a disablement of notification of specific types of events and information.* See page 120, section 5.1, e.g. “Tracing...can be turned on or off...”

Art Unit: 2192

In regard to claim 43, the above rejection of claim 42 is incorporated. Beguelin further discloses: *unregistering the specific types of events and information in which the profiler is not interested*. See page 120, section 5.1, e.g. “Tracing...can be turned on or off...”

In regard to claims 44, 47, and 48, the above rejection of claim 20 is incorporated. All further limitations have been addressed in the above rejection of claims 39, 42, and 43, respectively.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 40, 41, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beguelin as applied to claim 10 above, and further in view of “How Debuggers Work” by Rosenberg (hereinafter “Rosenberg”).

In regard to claim 40, the above rejection of claim 10 is incorporated. Beguelin does not expressly disclose: *one-time events*. All further limitations have been addressed in the above rejection of claim 39. However, Rosenberg teaches that debuggers are notified of one-time events. See at least page 181, e.g.

Art Unit: 2192

“EXIT_PROCESS_DEBUG_EVENT.” It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rosenberg’s one-time events with Beguelin’s profiler in order to identify events that may impact the performance of a program as suggested by Rosenberg (see top of page 180).

In regard to claim 41, the above rejection of claim 10 is incorporated. Beguelin does not expressly disclose: *sending defining events and information of the specific types to the profiler agent*. However, Rosenberg teaches that debuggers are sent information regarding defining events. See page 181, e.g.

“CREATE_PROCESS_DEBUG_EVENT.” It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rosenberg’s one-time events with Beguelin’s profiler in order to identify events that may impact the performance of a program as suggested by Rosenberg (see top of page 180).

In regard to claims 45 and 46, the above rejection of claim 20 is incorporated. All further limitations have been addressed in the above rejection of claims 40 and 41, respectively.

13. Claims 49, 50, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beguelin in view of U.S. Patent 5,193,180 to Hastings (hereinafter “Hastings”).

Art Unit: 2192

In regard to claim 49, Beguelin discloses: *A system for profiling ..., the system comprising: a memory; and one or more processors coupled to the memory, wherein at least one processor is configured to perform a method for interfacing a profiler to a virtual machine.* See page 108, right column, paragraph 2, e.g. “a network of heterogeneous computers (some of which may be MPPs) as a single multicomputer.”

Note that multicomputers are computers where each processor has its own memory rather than shared memory. Beguelin does not expressly disclose: *a heap*. However, Hastings teaches that heap operations should be examined. See column 11 lines 44-46, e.g. “track the heap.” It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Hastings’s heap tracking with Beguelin’s system in order to track heap processes as suggested by Hastings.

In regard to claims 50, 53, and 54, the above rejection of claim 49 is incorporated. All further limitations have been addressed in the above rejection of claims 39, 42, and 43, respectively.

14. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beguelin and Hastings as applied to claim 49 above, and further in view of Rosenberg.

In regard to claims 51 and 52, the above rejection of claim 49 is incorporated. All further limitations have been addressed in the above rejection of claims 40 and 41, respectively.

Art Unit: 2192


Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Derek Rutten whose telephone number is (571)272-3703. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jdr


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